

What is claimed is:

1. A compound 8 to 80 nucleobases in length targeted to a nucleic acid molecule encoding diacylglycerol acyltransferase 2, wherein said compound is at least 70% complementary to said nucleic acid molecule encoding diacylglycerol acyltransferase 2, and wherein said compound inhibits the expression of diacylglycerol acyltransferase 2 mRNA by at least 10%.
2. The compound of claim 1 comprising 12 to 50 nucleobases in length.
3. The compound of claim 2 comprising 15 to 30 nucleobases in length.
4. The compound of claim 1 comprising an oligonucleotide.
5. The compound of claim 4 comprising an antisense oligonucleotide.
6. The compound of claim 4 comprising a DNA oligonucleotide.
7. The compound of claim 4 comprising an RNA oligonucleotide.
8. The compound of claim 4 comprising a chimeric oligonucleotide.
9. The compound of claim 4 wherein at least a portion of said compound hybridizes with RNA to form an oligonucleotide-RNA duplex.
10. The compound of claim 1 having at least 80% complementarity with said nucleic acid molecule encoding diacylglycerol acyltransferase 2.
11. The compound of claim 1 having at least 90% complementarity with said nucleic acid molecule encoding diacylglycerol acyltransferase 2.

12. The compound of claim 1 having at least 95% complementarity with said nucleic acid molecule encoding diacylglycerol acyltransferase 2.

13. The compound of claim 1 having at least 99% complementarity with said nucleic acid molecule encoding diacylglycerol acyltransferase 2.

14. The compound of claim 1 having at least one modified internucleoside linkage, sugar moiety, or nucleobase.

15. The compound of claim 1 having at least one 2'-O-methoxyethyl sugar moiety.

16. The compound of claim 1 having at least one phosphorothioate internucleoside linkage.

17. The compound of claim 1 having at least one 5-methylcytosine.

18. A method of inhibiting the expression of diacylglycerol acyltransferase 2 in a cell or tissue comprising contacting said cell or tissue with the compound of claim 1 so that expression of diacylglycerol acyltransferase 2 is inhibited.

19. A method of screening for a modulator of diacylglycerol acyltransferase 2, the method comprising the steps of:

contacting a preferred target segment of a nucleic acid molecule encoding diacylglycerol acyltransferase 2 with one or more candidate modulators of diacylglycerol acyltransferase 2, and

identifying one or more modulators of diacylglycerol acyltransferase 2 expression which modulate the expression of diacylglycerol acyltransferase 2.

20. The method of claim 19 wherein the modulator of diacylglycerol acyltransferase 2 expression comprises an oligonucleotide, an antisense oligonucleotide, a DNA

oligonucleotide, an RNA oligonucleotide, an RNA oligonucleotide having at least a portion of said RNA oligonucleotide capable of hybridizing with RNA to form an oligonucleotide-RNA duplex, or a chimeric oligonucleotide.

21. A diagnostic method for identifying a diseased state associated with diacylglycerol acyltransferase 2 expression comprising identifying the presence of diacylglycerol acyltransferase 2 in a sample using at least one of the primers comprising SEQ ID NOS 6 or 7, or the probe comprising SEQ ID NO: 8.

22. A kit or assay device comprising the compound of claim 1.

23. A method of ameliorating or lessening the severity of a condition in an animal comprising contacting said animal with an effective amount of the compound of claim 1 so that expression of diacylglycerol acyltransferase 2 is inhibited and measurement of one or more physical indicia of said condition indicates a lessening of the severity of said condition.

24. The method of claim 23 wherein the condition is a cardiovascular disorder.

25. The method of claim 23 wherein the condition is obesity.

26. The method of claim 25 wherein the obesity is diet-induced.

27. The method of claim 25 wherein physical indicia of obesity is increased fat.

28. The method of claim 23 wherein the condition is diabetes.

29. The method of claim 23 wherein the condition is cholesterolemia.

30. The method of claim 23 wherein the condition is liver steatosis.

31. The method of claim 23 wherein the animal is obese.

32. The method of claim 23 wherein the animal is a mammal.

33. A method of lowering serum free fatty acids in an animal comprising contacting said animal with an effective amount of the compound of claim 4.

34. A method of lowering serum triglycerides in an animal comprising contacting said animal with an effective amount of the compound of claim 4.

35. A method of lowering HDL cholesterol in an animal comprising contacting said animal with an effective amount of the compound of claim 4.

36. A method of lowering total serum cholesterol in an animal comprising contacting said animal with an effective amount of the compound of claim 4.

37. A method of lowering plasma insulin in an animal comprising contacting said animal with an effective amount of the compound of claim 4.

38. A method of lowering hepatic triglycerides in an animal comprising contacting said animal with an effective amount of the compound of claim 4.

39. The method of claim 37 wherein said plasma insulin levels are lowered at two weeks after said contacting.

40. The method of claim 37 wherein said plasma insulin levels are lowered at four weeks after said contacting.

41. The compound of claim 1, wherein said compound comprises a sequence selected from the group consisting of SEQ ID NOS: 20, 21, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 56, 57, 58, 60, 61, 62, 63, 64,

65, 66, 68, 69, 70, 71, 72, 73, 75, 76, 77, 78, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 94, 95, 96, 97, 101, 109, 114, 115, 120, 121, 122, 123, 124, 127, 128, 130, 133, 136 and 142.

42. The compound of claim 1, wherein said compound comprises an antisense nucleic acid molecule that is specifically hybridizable with a 5'-untranslated region (5'UTR) of the diacylglycerol acyltransferase 2 (SEQ ID NO: 4).

43. The compound of claim 1, wherein said compound comprises an antisense nucleic acid molecule that is specifically hybridizable with a start region of the diacylglycerol acyltransferase 2 (SEQ ID NO: 4).

44. The compound of claim 1, wherein said compound comprises an antisense nucleic acid molecule that is specifically hybridizable with a coding region of the diacylglycerol acyltransferase 2 (SEQ ID NO: 4).

45. The compound of claim 1, wherein said compound comprises an antisense nucleic acid molecule that is specifically hybridizable with a stop region of the diacylglycerol acyltransferase 2 (SEQ ID NO: 4).

46. The compound of claim 1, wherein said compound comprises an antisense nucleic acid molecule that is specifically hybridizable with a 3'-untranslated region of the diacylglycerol acyltransferase 2 (SEQ ID NO: 4).

47. The compound of claim 1, wherein said compound comprises an antisense nucleic acid molecule that is

specifically hybridizable with a exon:inton region of the diacylglycerol acyltransferase 2 (SEQ ID NO: 4).

48. The compound of claim 1, wherein said compound comprises an antisense nucleic acid molecule that is specifically hybridizable with a intron:exon region of the diacylglycerol acyltransferase 2 (SEQ ID NO: 4).

49. A method of inhibiting the expression of diacylglycerol acyltransferase 2 in a cell or tissue of an animal comprising contacting said cell or tissue with the compound of claim 1 so that expression of diacylglycerol acyltransferase 2 is inhibited.

50. The method of claim 49 wherein said tissue is white adipose tissue.

51. The method of claim 49 wherein the tissue is brown adipose tissue.

52. A method of modulating fatty acid synthesis in an animal comprising contacting said animal with the compound of claim 4.

53. A method of modulating lipogenesis in an animal comprising contacting said animal with the compound of claim 4.

54. A method of modulating gluconeogenesis in an animal comprising contacting said animal with the compound of claim 4.

55. A method of reducing the liver weight of an animal comprising contacting said animal with the compound of claim 4.

56. The method of claim 55 wherein the animal is obese.

57. The method of claim 55 wherein the animal is diabetic.